

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method for providing guaranteed Quality of Services (QoS) in an IP network, comprising:

configuring a service bearer logic network layer from a basic network layer for a service type for bearing traffic streams with guaranteed QoS requirements;

a—after receiving a service request with guaranteed QoS requirement from a subscriber, a relevant service entity in the network obtaining, by a service control layer, the addresses of a source subscriber and a destination subscriber and QoS parameters for of the service through analyzing the service request, and sending a route selection and resource application request to a bearer control layer of the network;

b— a bearer network resource manager in the bearer control layer allocating, by a bearer network resource manager in the bearer control layer, route and resources and route from the source subscriber to the destination subscriber which comprises multiple Label Switched Paths for the service in the service bearer logic network of this service type according to said the addresses of the source subscriber and the destination subscriber and service type, generating a multi-level label stack for the resources and route, and informing the multi-level label stack to the service bearer logic network; and

e—forwarding the traffic streams in the service bearer logic network according to labels configured in the multi-level label stack the route and resources determined generated by the bearer network resource manager in the bearer control layer.

2. (Cancelled)

3. (Currently Amended) The method according to claim 21, wherein ~~the said~~ service bearer logic network ~~layer includes comprises~~ edge nodes and tandem switching nodes, between ~~which any two nodes~~ Label Switched Path (LSP) connections are established with Multi-Protocol Label Switching (MPLS) technology.

4. (Currently Amended) The method according to claim 3, wherein ~~said the~~ tandem switching nodes are a part of core routers ~~which are selected from network resource management areas~~ of the service bearer logic network layer.

5-6 (Cancelled)

7. (Currently Amended) The method according to claim 1, wherein ~~said route allocated for the service is represented with a multi-level label stack, in step c, nodes in the service bearer logic network forward the traffic stream according to labels configured in the multi-level label stack; and the levels of the multi-level label stack is~~ are decreased by one level whenever each time an MPLS packet for of the service passes a tandem switching node.

8. (Currently Amended) The method according to claim 7, wherein ~~during forwarding traffic stream data packets~~, the just passed LSP ends ~~whenever after the MPLS packet of the service~~ a traffic stream data packet passes a ~~the~~ tandem switching node, the label representing ~~said the~~ LSP in the multi-level label stack is popped at this the tandem switching node or at the a second last hop router in the LSP, ~~then said the~~ tandem switching node forwards ~~said the MPLS~~ packet according to the current top label representing ~~the a~~ next LSP.

9. (Currently Amended) The method according to claim 1, ~~step b~~ further comprising: ~~the step of~~ informing the service control layer to reject the service request from the subscriber ~~when if~~ a bearer network resource manager finds the route selection is failed due to no enough resources in the logic topology of the area.

10. (Currently Amended) The method according to claim 1, wherein ~~said~~ service bearer logic networks layers for different service types have the same topology ~~or different topologies for each service type~~.

11. (Currently Amended) The method according to claim 1, wherein ~~the a~~ network structure of ~~said the~~ service bearer logic network layer is identical with or similar to ~~that the~~ network structure of a public telephone network.

12. (Currently Amended) The method according to claim 1, wherein ~~said the~~ service bearer logic network ~~layer can be~~comprises any one of: a metropolitan area network, a provincial backbone network, a national backbone network ~~or and even an~~ international backbone network.

13. (Currently Amended) The method according to claim 4 ~~4~~, wherein ~~said service bearer logic network is divided into different~~ network resource management areas ~~which~~ are respectively managed by correspondent bearer network resource manager.

14. (Currently Amended) The method according to claim 1, wherein the basic network ~~layer comprises~~is any one of: an IP backbone network, a local area network, a metropolitan network ~~or and an internet~~ network.

15. (Currently Amended) The method according to claim 1, wherein the service with guaranteed QoS requirement ~~is~~comprises any one of: a voice service, a video communication service, a stream media video service ~~or and~~ other services with special QoS requirement.

16. (Currently Amended) The method according to claim 1, further comprising: after a subscriber terminates or finishes the service, ~~said bearer control layer releasing, by the bearer control layer,~~ resources occupied by the service, and

informing correspondent edge routers to cancel processing for the traffic stream of the service.

17. (Currently Amended) A system for providing guaranteed Quality of Service (QoS) in an IP network, comprising:

a basic network layer, ~~including~~ comprising edge routers and core routers, for bearing various IP service packets;

a service bearer logic layer, ~~planned~~ and configured from the basic network layer and divided into multiple network resource management areas, ~~including~~ comprising edge nodes, tandem switching nodes and connections ~~among them~~ between any two nodes, for bearing traffic streams with guaranteed QoS requirements;

a bearer control layer, ~~including~~ comprising bearer network resource managers, for managing the ~~bearer network~~ resources of a network resource management area for said the service bearer logic layer and basic network layer; and

a service control layer, ~~including~~ comprising multiple service control layer servers ~~service entities~~, for processing service requests;

wherein the bearer network resource manager allocates resources and route comprising multiple Label Switched Paths in the service bearer logic layer for a service, generates a multi-level label stack for the resources and route, wherein the multi-level label stack comprises multiple labels each of the label stands for an LSP of the route, and informs the multi-level label stack to the service bearer logic layer; and

the service bearer logic network forwards the traffic streams of the service along the LSPs represented by the labels configured in the multi-level label stack.

18. (Currently Amended) The ~~method~~system according to claim 17, wherein the logic connections between nodes in the service bearer logic layer are Label Switching Path (LSP) connections established with Multi-Protocol Label Switching (MPLS) technology.

19. (New) The method according to claim 1, wherein service bearer logic network layers for different service types have different topologies.